

Attorney's Docket: 1999DE119
Serial No. 09/577,464
Group: 1714

Amendments to the Claims

1. (Currently Amended) A process for the preparation of alkylphosphonous acid esters, ~~which comprises~~ comprising the steps of:
 - a) reacting elemental yellow phosphorus with alkylating agents in the presence of a base to give a mixture which comprises, as principal constituents, the (metal) salts of alkylphosphonous, phosphorous and hypophosphorous acids,
 - b) esterifying the principal constituents of the mixture from a) to give an ester mixture, and
 - c) isolating the ester of the alkylphosphonous acid from the ester mixture.
2. (Currently Amended) A process as claimed in claim 1, wherein the alkylating agents are alkyl halides, dialkyl sulfates, trialkyl phosphates, dialkyl carbonates ~~and/or~~ or formic acid ortho-esters.
3. (Currently Amended) A process as claimed in claim 1, wherein the alkylating agent employed is methyl chloride, methyl bromide ~~and/or~~ or dimethyl sulfate.
4. (Currently Amended) A process as claimed in claim 1, wherein the ~~bases are~~ base is selected from the group consisting of hydroxides, carbonates, bicarbonates, amides, alkoxides and/or amine bases.
5. (Previously Presented) A process as claimed in claim 1, wherein the reaction in step a) is carried out in a two-phase system comprising aqueous alkali or alkaline-earth metal hydroxide or mixtures thereof and an organic solvent.
6. (Currently Amended) A process as claimed in claim ~~15~~ 45, wherein the organic ~~solvents~~ solvent employed ~~are~~ is selected from the group consisting of

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straight-chain or branched alkanes, alkyl-substituted aromatic solvents, water-immiscible or only partially water-miscible alcohols or ethers, ~~alone or in combination with one another and combinations thereof.~~

7. (Currently Amended) A process as claimed in claim 4~~5~~, wherein the organic solvent employed is toluene, alone or in combination with alcohols.
8. (Previously Presented) A process as claimed in claim 1, wherein the reaction is carried out in the presence of a phase-transfer catalyst.
9. (Previously Presented) A process as claimed in claim 8, wherein the phase-transfer catalyst is a tetraalkylphosphonium halide, triphenylalkylphosphonium halide or tetraorganylammonium halide.
10. (Previously Presented) A process as claimed in claim 1, wherein the temperature during the reaction with the yellow phosphorus is from -20 to +80°C.
11. (Previously Presented) A process as claimed in claim 1, wherein the temperature during the reaction with the yellow phosphorus is from 0 to 30°C.
12. (Previously Presented) A process as claimed in claim 1, wherein the reaction is carried out under a pressure of from 0 to 10 bar.
13. (Previously Presented) A process as claimed in claim 1, wherein the principal constituents of the mixture from a) are esterified in step b) using a linear or branched alcohol of the general formula R-OH, where R is a linear or branched alkyl radical having 1 to 10 carbon atoms.
14. (Currently Amended) A process as claimed in claim 1, wherein the principal constituents of the mixture from a) are reacted with at least one mineral acids acid to give a mixture of alkylphosphonous, phosphorous and

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hypophosphorous acids and at the same time the (metal) salts of the mineral acids are precipitated, and the mixture of these acids is subsequently esterified.

15. (Previously Presented) A process as claimed in claim 1, wherein the water formed during the esterification is removed by azeotropic distillation.
16. (Currently Amended) A process as claimed in claim ~~46~~, wherein the alcohol is n- or i-butanol, n-hexanol, ethylhexanol and/or amyl alcohol.
17. (Currently Amended) A process as claimed in claim 1, wherein the at least one mineral acid is hydrochloric acid, sulfuric acid and/or phosphoric acid.
18. (Currently Amended) A process as claimed in claim 1, wherein the at least one mineral acid is hydrochloric acid.
19. (Previously Presented) A process as claimed in claim 1, wherein the phosphines formed in small amounts in step a) are removed by oxidation.
20. (Currently Amended) A process as claimed in claim ~~19~~, wherein hydrogen peroxide is employed for the oxidation.
21. (Previously Presented) A process as claimed in claim 1, wherein the ester of the alkylphosphonous acid is removed by distillation in step c).
22. (Currently Amended) A process as claimed in claim 1, wherein the ester of the alkylphosphonous acid is n-butyl methylphosphonite, isobutyl methylphosphonite, n-hexyl methylphosphonite, 2-ethylhexyl methylphosphonite and/or amyl methylphosphonite.
23. (Withdrawn) The use of an alkylphosphonous acid ester prepared by a process as claimed in claims 1 for the preparation of organophosphorus compounds and derivatives.

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24. (Withdrawn) The use of an alkylphosphonous acid ester prepared by a process as claimed in claims 1 as a precursor for chemical synthesis.
25. (Withdrawn) The use of an alkylphosphonous acid ester prepared by a process as claimed in claims 1 for the preparation of phosphinic acids as starting materials for crop protection agents.
26. (Withdrawn) The use of an alkylphosphonous acid ester prepared by a process as claimed in claims 1 for the preparation of flame retardants.
27. (Withdrawn) The use of an alkylphosphonous acid ester prepared by a process as claimed in claims 1 for the preparation of flame retardants for thermoplastic polymers, such as polyethylene terephthalate, polybutylene terephthalate or polyamide.
28. (Withdrawn) The use of an alkylphosphonous acid ester prepared by a process as claimed in claims 1 for the preparation of flame retardants for thermosetting resins, such as unsaturated polyester resins, epoxy resins, polyurethanes or acrylates.